

Sept. 10 Statistic for the day:
 Number of 18- to 34-year-olds in US living at home in 1970:
 12.5 million
 In 2006:
 18.6 million

Assignment:
 Read Chapter 4
 Exercises p. 73-77: 1, 4, 5, 7, 9, 17

Reminder: Pitfalls in asking survey questions

From page 38:

1. Deliberate bias
2. Unintentional bias
3. Desire to please
4. Asking the uninformed
5. Unnecessary complexity
6. Ordering of questions can influence answers
7. (Perceived) lack of confidentiality / anonymity

Open- and closed-form questions

A closed question is one in which respondents are given a list of possible answers to pick from. (Difficulty: Important choices may be left out.)

An open question is one in which respondents are allowed to answer in their own words. (Difficulty: results are hard to summarize.)

The problem is that the closed question responses may not even be mentioned by people responding to the open version of the question.

Solution: Do a small pilot study with open questions, then pick the most common responses for the closed questions.

A trick in advertising (Example 7, p. 46)

Advertisement for Triumph cigarettes: "Triumph beats Merit—an amazing 60% said Triumph tastes as good or better than Merit."

Three choices were given to the respondents:

- Prefer Triumph
- Prefer Merit
- No preference

36% preferred Triumph
 40% preferred Merit
 24% no preference

Statement in the advertisement is true but Merit is preferred by respondents!

Three concepts relating to measurements (pp. 48-9)

1. Validity of a measurement: *Does it measure what it's supposed to?*
2. Reliability of a measurement: *Do repeated measurements give the same results?*
3. Bias of a measurement: *Is there a systematic prejudice in repeated measurements?*

Consider a clock that's 5 minutes fast.

- Valid or invalid?
- Reliable or unreliable?
- Biased or unbiased?

Answer: valid, reliable and biased.

The clock measures what it's supposed to (time);
 Repeated measurements give consistent answers;
 There is a systematic prejudice

Consider a scale that is sometimes several pounds too low, sometimes several pounds too high

- Valid or invalid?
- Reliable or unreliable?
- Biased or unbiased?

Answer: valid, unreliable and unbiased.

The scale measures what it's supposed to (weight);
Repeated measurements do not give consistent results;
There is no systematic prejudice in repeated measurements

Consider compiling police reports as a measure of the amount of crime committed in a city

- Valid or invalid?
- Reliable or unreliable?
- Biased or unbiased?

Answer: Invalid, reliable and unbiased (though bias is perhaps ambiguous).

Not all crimes committed appear in police reports;
Repeated compilations of same reports would give same results;
There is no systematic prejudice in repeated compilations

Key: What they measure, the reports measure very well. The question is whether they measure what is desired.